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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,315

04/19/2004

Jun Hirabayashi

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EXAMINER

SARPONG, AKWASI

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,315	Applicant(s) HIRABAYASHI ET AL.	
	Examiner AKWASI M. SARPONG	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-12 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/31/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seto (5875044) in view of Loce (5696845).

Claim 1, Seto discloses an exposure deciding method for deciding laser exposure when image formation is performed by an electro photographic process (**Col. 9 Lines 35-39, Fig. 1**), comprising:

an expansion step of expanding image data at a higher resolution (**Col. 9 Lines 40-45 and Col. 11 Lines 40-58, thus the data is expanded when the dot configuration is being extended**).

a resolution conversion step of subjecting high-resolution data, which is the result of expansion at said expansion step, to a resolution conversion to the actual resolution of the output (**Col. 12 Lines 9-19, Fig. 7**) apparatus, by a prescribed low-resolution conversion method (**Col. 12 Lines 9-19, Fig. 7 thus as color is being converted the image data is heated or expanded**)

and

an image formation step of forming an image represented by image data, which has undergone the resolution conversion performed at said resolution conversion step,

based upon the laser exposure in such a manner that density of image data will be the same before and after the resolution conversion performed by the prescribed low-resolution conversion (**Col. 6 Lines 50-56, Fig. 1 EI D5, and Col. 21 Lines 20-55, thus the development of toner image is the same as image formation**).

Seto does not disclose an exposure decision step of deciding laser exposure when image formation is performed in such a manner that density of prescribed image data will be the same before and after image formation and the output image resolution is the same as the input image resolution.

Loce discloses an image formation is performed in such a manner that density of prescribed image data will be the same before and after image formation (**Col. 12 Lines 40-45**) and the output image resolution is the same as the input image resolution. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Seto's electro photographic process to further include where the density of the input image is the same with the output image and the output image resolution is the same as the input image resolution as taught by Loce so that an enhanced printed output will be produced by the printer as disclosed by Loce in Col. 5 Lines 30-39.

Note: after the modification, the output image resolution is the same as the input image resolution. Therefore, the image expanded by the expansion step would have a higher resolution compare to the actual resolution of the output apparatus.

Claim 2, Seto (Col. 16 Lines 7-20, Fig. 7 El. 17, thus the interpolator averages all the pixels of the image data) in view of Loce (Col. 12 Lines 35-55) discloses a method wherein said resolution conversion step includes averaging the high-resolution data using a matrix of a predetermined size and subjecting the actual resolution of the output apparatus to a resolution conversion. (Sato: Col. 11 Lines 25-35, thus the LUP table use a matrix which has matrix stored in it as part of the conversion process).

Claim 3, Seto in view of Loce (Col. 12 Lines 35-46, Fig. 11 El. 472) discloses a method wherein said resolution conversion step includes averaging the high-resolution data using a matrix in which boxes of a matrix of a predetermined size have been shifted by one-half pixel. (Sato: Col. 12 Lines 32-40 and Col. 14 Lines 40-52, thus the average is ascertained through the interpolation process which takes into account the high-resolution data).

Claim 4, Seto in view of Loce discloses a method wherein a prescribed pattern is formed that will take on a different image formation state by the prescribed low-resolution conversion method despite the fact that an original image pattern is the same the density of the prescribed pattern is measured, (Loce: Col. 10, lines 62-67, Fig. 10,

El. 264 and 266) and (Loce: Col. 11 Lines 1-4) (Sato: Col. 2 lines 1-7, thus the density pattern method includes using the predetermined pattern of the image).
and the laser exposure is determined in such a manner that the density of the prescribed pattern will be the same before and after image formation **(Loce: Col. 12 Lines 40-45, thus the input template are chosen as the occurrence occurs).**

Claim 5, Seto in view of Loce **(Loce: Col. 12 Lines 40-65, Fig. 11)** discloses a method wherein a prescribed pattern is formed that is repeated at fixed intervals, the density of the prescribed pattern is measured and the laser exposure based upon the measured density in such a manner that a difference in average density will not develop between the prescribed patterns. **(Sato: Col. 2 lines 1-7, thus the density pattern method includes using the predetermined pattern of the image)**

Claim 6, Seto discloses an image forming apparatus for deciding laser exposure when image formation is performed by an electro photo graphic process **(Col. 9 Lines 35-39, Fig. 1, thus the image is formed or printed by laser printer, i.e. using toner as a means of printing)**, comprising:

an expansion unit adapted to expand image data at a resolution higher **(Col. 9 Lines 40-45 and Col. 11 Lines 40-58, thus the data is expanded when the dot configuration is being extended which changes the resolution);**

resolution conversion subject high-resolution data, which is the result of expansion by said expansion unit to a resolution conversion to the actual resolution of

the output apparatus, by a prescribed low-resolution conversion method **(Col. 12 Lines 9-19, Fig. 7 thus as color is being converted the image data is heated or expanded)**

an image formation unit **(development section)** adapted to form an image represented by image data, which has undergone the resolution conversion performed by said resolution conversion unit, based upon the laser exposure set in such a manner that density of image data will be the same before and after the resolution conversion performed by the prescribed low-resolution conversion. **(Col. 6 Lines 50-56, Fig. 1 EI D5, and Col. 21 Lines 20-55, thus the development of toner image is the same as image formation).**

Seto does not disclose an exposure decision means of deciding laser exposure when image formation is performed in such a manner that density of prescribed image data will be the same before and after image formation;

Loce discloses an image formation which is performed in such a manner that density of prescribed image data will be the same before and after image formation **(Col. 12 Lines 40-45 thus the density or image resolution does not change within the process of image formation or image printing)**. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Seto's electro photographic process to further include where the density of the input image is the same with the output image and the output image resolution is the same as the

input image resolution as taught by Loce so that an enhanced printed output will be produced by the printer as disclosed by Loce in Col. 5 Lines 30-39.

Note: after the modification, the output image resolution is the same as the input image resolution. Therefore, the image expanded by the expansion step would have a higher resolution compare to the actual resolution of the output apparatus.

Claim 7- Cancelled

Claim 8, -Cancelled

Claim 9, Sato in view of Loce discloses wherein said resolution conversion unit averages the high-resolution data using a matrix of a predetermined size and subjects the actual resolution of the output apparatus to a resolution conversion. **(Sato: Col. 11 Lines 25-35, thus the LUP table use a matrix which has matrix stored in it as part of the conversion process).**

Claim 10, Sato in view of Loce (Col. 12 Line 40-47, thus) discloses wherein said resolution conversion unit averages the high-resolution data using a matrix in which boxes of a matrix of a predetermined size have been shifted by one-half pixel. **(Sato: Col. 12 Lines 32-40 and Col. 14 Lines 40-52, thus the average is ascertained**

through the interpolation process which takes into account the high-resolution data).

Claim 11, Sato in view of Loce discloses wherein a prescribed pattern is formed that will take on a different image formation state by the prescribed low- resolution conversion method despite the fact that an original image pattern is the same, the density of the prescribed pattern formed is measured, **(Sato: Col. 2 lines 1-7, thus the density pattern method includes using the predetermined pattern of the image)** and the laser exposure is determined in such a manner that the density of the prescribed pattern will be the same before and after image formation. **(Loce: Col. 12 Lines 40-45, thus the input template are chosen as the occurrence occurs)**

Claim 12, Sato in view of Loce discloses an apparatus wherein a prescribed pattern is formed that is repeated at fixed intervals, the density of the prescribed pattern is measured, **(Sato: Col. 2 lines 1-7, thus the density pattern method includes using the predetermined pattern of the image)** and the laser exposure is determined based on the measured density in such a manner that a difference in average density will not develop between the prescribed patterns. **(Sato: Col. 11 lines 40-58) and (Loce: Col. 7 Lines 1-8, thus the resolution of the image does not change from what it was before and therefore averaging the density does not make any difference)**

Response to Applicant's Remarks:

1. Applicant's arguments filed 04/03/2008 have been fully considered but they are not persuasive.

Regarding the claimed invention the applicant argues that the claimed invention is different from the cited reference because the applicant asserts that Sato in view of Loce does not disclose:

An exposure deciding method for deciding laser exposure when image formation is performed by an electrophotographic process, comprising:

an expansion step of expanding image data at a resolution higher than an actual resolution of an output apparatus;

a resolution conversion step of subjecting high-resolution data, which is the result of expansion at said expansion step, to a resolution conversion to the actual resolution of the output apparatus by a prescribed low-resolution conversion method; and

an image formation step of forming an image represented by image data, which has undergone the resolution conversion performed at said resolution conversion step, based upon the laser exposure set in such a manner that density of image data will be the same before and after the resolution conversion performed by the prescribed low-resolution conversion.

In reply: Seto discloses an exposure deciding method for deciding laser exposure when image formation is performed by an electro photographic process (**Col. 9 Lines 35-39, Fig. 1**), comprising:

an expansion step of expanding image data at a higher resolution (**Col. 9 Lines 40-45 and Col. 11 Lines 40-58, thus the data is expanded when the dot configuration is being extended**).

a resolution conversion step of subjecting high-resolution data, which is the result of expansion at said expansion step, to a resolution conversion to the actual resolution of the output (Col. 12 Lines 9-19, Fig. 7) apparatus, by a prescribed low-resolution conversion method (**Col. 12 Lines 9-19, Fig. 7 thus as color is being converted the image data is heated or expanded**)

and

an image formation step of forming an image represented by image data, which has undergone the resolution conversion performed at said resolution conversion step, based upon the laser exposure in such a manner that density of image data will be the same before and after the resolution conversion performed by the prescribed low-resolution conversion (**Col. 6 Lines 50-56, Fig. 1 EI D5, and Col. 21 Lines 20-55, thus the development of toner image is the same as image formation**).

Seto does not discloses an exposure decision step of deciding laser exposure when image formation is performed in such a manner that density of prescribed image

data will be the same before and after image formation and the output image resolution is the same as the input image resolution.

Loce discloses an image formation is performed in such a manner that density of prescribed image data will be the same before and after image formation (**Col. 12 Lines 40-45**) and the output image resolution is the same as the input image resolution. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify Seto's electro photographic process to further include where the density of the input image is the same with the output image and the output image resolution is the same as the input image resolution as taught by Loce so that an enhanced printed output will be produced by the printer as disclosed by Loce in Col. 5 Lines 30-39.

Note: after the modification, the output image resolution is the same as the input image resolution. Therefore, the image expanded by the expansion step would have a higher resolution compare to the actual resolution of the output apparatus.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKWASI M. SARPONG whose telephone number is (571)270-3438. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

AMS
07/03/2008